# APPENDIX I:

THE LISTING OF CLAIMS:

1. (*previously presented*) An epoxide hydrolase (E.C. 3.3.2.3) from a microorganism of the genus *Streptomyces*.

2. (*original*) An epoxide hydrolase as claimed in claim 1, having at least one of the following properties:
   a) hydrolytic epoxide cleavage of a styrene oxide and of at least one other compound selected from ethyl 3-phenylglycidates, n-hexane-1,2-oxides, n-decane-1,2-oxides and indene oxides;
   b) conversion of a racemate of styrene oxide with an enantioselectivity $E \geq 2$ to give (S)-phenyl-1,2-ethanol.

3. (*previously presented*) An epoxide hydrolase isolated from bacteria of the genus *Streptomyces* from the species *Streptomyces griseus*, *Streptomyces thermovulgaris*, *Streptomyces antibioticus*, *Streptomyces arenae* and *Streptomyces fradiae*.

4. (*canceled*)

5. (*previously presented*) A process for separating epoxide enantiomer mixtures, which comprises
   a) incubating an epoxide enantiomer mixture, which comprises an epoxide hydrolase substrate, with an epoxide hydrolase as claimed in claim 1, a microorganism of the genus *Streptomyces*, an epoxide hydrolase-containing homogenate thereof, or a fraction of this homogenate;
   b) converting the enantiomeric mixture; and
   c) fractionating the reaction mixture.

6. (*previously presented*) A process as claimed in claim 5, wherein an enantiomeric mixture of an epoxide is converted, which mixture is selected from the group consisting of styrene oxides, 3-phenylglycidate, hexane-1,2-oxides, decane-1,2-oxides and indene oxides.

7. (*previously presented*) A detection method for epoxide hydrolase, which comprises
   a) incubating an analyte in which epoxide hydrolase activity is suspected with an epoxide-containing substrate for the hydrolase under reaction conditions, wherein the analyte is a bac-

terium of the genus *Streptomyces*, a homogenate therefrom or a fraction of this homogenate;

b) carrying out a color reaction with the epoxide remaining unreacted in stage a) in the presence of 4-nitrobenzylpyridine (NBP) to form a pigment; and

c) analyzing the solution from step b) for a decrease in pigment concentration, relative to an epoxide hydrolase-free control solution.

8. (*original*) A method as claimed in claim 7, wherein the relative decrease in pigment concentration is determined quantitatively and the epoxide hydrolase activity in the analyte is determined therefrom.

9. (*canceled*)

10. (*canceled*)

11. (*previously presented*) A method as claimed in claim 7, wherein the epoxide-containing substrate is selected from the group consisting of styrene oxide, 3-phenylglycidate, hexane-1,2-oxide and indene oxide, each of which group members being employed in enantiomeric pure form or as an enantiomeric mixture.

12. (*previously presented*) A screening method for detecting microorganisms having epoxide hydrolase activity, or having the ability for the enantioselective hydrolysis of epoxides, comprising a detection method as claimed in claim 7.

13. (*previously presented*) A method for the enantioselective hydrolysis of epoxides, which comprises reacting an enantiomeric mixture of epoxides with an epoxide hydrolase as claimed in claim 1, a microorganism of the genus *Streptomyces*, an epoxide-hydrolase-containing homogenate thereof or a fraction of this homogenate to obtain a reaction mixture comprising non-reacted epoxide and a hydroxyide, and isolating the non-reacted epoxide or the hydroxide, or both from the reaction mixture.

14. (*canceled*)

15. (*previously presented*) A process for producing epoxide hydrolases (E.C. 3.3.2.3), which comprises

a) producing a cell homogenate from a culture of a microorganism of the genus *Streptomyces*;

b) fractionating the homogenate obtained in stage a), and testing the resultant fractions for epoxide hydrolase activity; and

c) combining fractions having epoxide hydrolase activity, and optionally further fractionating the combined fractions.

16. (*previously presented*) The epoxide hydrolase of claim 3, wherein the bacteria of the genus *Streptomyces* are selected from the strains *Streptomyces griseus* (DSM 40236 and DSM 13447), *Streptomyces thermovulgaris* (DSM 40444 and DSM 13448), *Streptomyces antibioticus* Tü4 (DSM 12925), *Streptomyces arenae* Tü495 (DSM 40737 and DSM 12134) and *Streptomyces fradiae* Tü27 (DSM 12131).

17. (*currently amended*) The process of claim 5, wherein the conversion of stage (b) is allowed to proceed until reaction ~~equillibrium~~ equilibrium is established before proceeding to stage (c).

18. (*previously presented*) The process of claim 15, wherein the resultant fractions are tested for epoxide hydrolase activity by a method which comprises

a) incubating an analyte in which epoxide hydrolase activity is suspected with an epoxide-containing substrate for the hydrolase under reaction conditions, wherein the analyte is a bacterium of the genus *Streptomyces*, a homogenate therefrom or a fraction of this homogenate;

b) carrying out a color reaction with the epoxide remaining unreacted in stage a) in the presence of 4-nitrobenzylpyridine (NBP) to form a pigment; and

c) analyzing the solution from step b) for a decrease in pigment concentration, relative to an epoxide hydrolase-free control solution.

19. (*previously presented*) The process of claim 18, wherein the relative decrease in pigment concentration is determined quantitatively and the epoxide hydrolase activity in the analyte is determined therefrom.

20. (*previously presented*) The process of claim 18, wherein the epoxide-containing substrate is selected from the group consisting of styrene oxide, 3-phenylglycidate, hexane-1,2-oxide and indene oxide, each of which group members being employed in enantiomeric pure form or as an enantiomeric mixture.

21. (*previously presented*) The process of claim 18, wherein the bacteria of the genus *Streptomyces* are selected from the strains *Streptomyces griseus* (DSM 40236 and DSM 13447), *Streptomyces thermovulgaris* (DSM 40444 and DSM 13448), *Streptomyces antibioticus* Tü4 (DSM 12925), *Streptomyces arenae* Tü495 (DSM 40737 and DSM 12134) and *Streptomyces fradiae* Tü27 (DSM 12131).